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ABSTRACT

An attempt was made to determine whether student honesty is affected by a take-home test, referred to as an unstructured evaluation. A group of 27 students in a history class at a university was given a teacher-made take-home test as a mid-term examination. A second group of 27 students was given the same examination in class. Unknown to the students, the tests were identical. One week later, a surprise objective test was given to both groups in class on the same material. A questionnaire accompanied this test, asking students how much effort they had spent preparing for the original test and how much they would have spent had they prepared for the other type of test. The group given the in-class test performed significantly better on the surprise test, although the take-home test group had higher scores on the original test. Members of the take-home test group said that they would have studied more had they prepared for an in-class test. It is concluded that student dishonesty accounts both for the poorer scores on the second test, indicative of less preparation, and the higher scores on the original test. Some students in the take-home test group probably did cheat and did not adequately learn the subject matter. (SLD)

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AN EFFECT OF UNSTRUCTURED EVALUATION ON ACADEMIC INTEGRITY

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**** abstract ****

Does the take-home test affect academic integrity? A large university class was randomized into halves. Group A was given a take-home test and Group B was given an in-class test. Unknown to both groups, their tests were identical. One week later, a surprise test was given to the entire class, covering the same material. There was no statistical difference on the first test but Group B performed significantly better on the surprise test. An analysis of the evidence suggests that some students in Group A practiced some academic dishonesty.

AN EFFECT OF UNSTRUCTURED EVALUATION ON ACADEMIC INTEGRITY

Introduction

With the growing concern over the humanizing of pedagogy, education has made a revolutionary swing from the stern didactics of early America to an increasingly permissive educational environment. The main goal of this movement has been to create a warm, learning climate. But one might fairly ask, "What other variables are affected?" For example, take-home tests have become popular because they reduce anxiety while enhancing learning. But some research (Gay and Gallagher, 1976 and Marsh, 1984) has suggested that the classic in-class test is superior as a vehicle for learning.

Academic integrity is also a key variable that should be considered in any educational setting. Therefore, this study was an attempt to determine if student honesty was affected by the take-home test, which could be referred to as an unstructured evaluation, since there are so few controls on it. Conversely, the classic in-class exam could be labeled a structured evaluation.

Background

The Cornell Value Study (Goldsen, 1960) revealed that two of five students polled at eleven colleges and universities freely admitted copying from another student or using crib notes. A study by the Carnegie Council on Policy Studies in Higher Education (1979) concluded that the nation's colleges were afflicted by an ethical crisis. Included among the symptoms mentioned was a significant and increasing frequency of cheating by both

graduate and undergraduate students. That dishonesty was present in our colleges was clearly established.

One of the most complete works on the subject of academic dishonesty in higher education was entitled "Student Dishonesty and Its Control in College," by William J. Bowers (1964). It was an in-depth piece of research which substantiated the following:

a. Academic dishonesty was the second most serious problem of student discipline in colleges and universities.

b. The greatest amount of dishonesty took place in homework and lab assignments.

c. At least fifty percent of the sample, which included 5,000 students from 99 institutions, had engaged in some form of academic dishonesty since having come to college.

d. Many students who think that cheating is wrong do so anyway.

e. If parents value high grades, it encourages cheating by their children. This situation implies perceived parental pressure to get high grades.

Although an honor system has a beneficial effect, colleges and universities are well aware that cheating persists and are taking steps to clamp down. For example, Notre Dame, Johns Hopkins, and the University of Illinois reluctantly abandoned their honor systems and reverted to using proctors to monitor exams (Sewall, et al., 1980). The Bowers Study had many more interesting findings. But only those were listed which could lead one

to fairly ask, "Is the take-home test an accurate measure of student academic achievement?"

Method

A history class in a large university, which employed an honor system, was randomized into two equal groups of 27 students. Group A was given a teacher-made, take-home (unstructured) type of mid-term exam. Group B was given a teacher-made, in-class (structured) type of mid-term exam. Unknown to the students, both exams were identical. The history class was selected because of its size and because it represented many types of students. Of the 54 students, the youngest was 19 years old and the oldest was 29 years. The mean age was 21.5 years. To control for test anxiety, the participants were all told that they would not be hurt academically by the results of the experiment. If they did not like their test scores, they could take a re-exam and still select the higher of the two scores as their grade. The students mainly represented those majoring in the arts and the applied and social sciences.

The history professor followed his usual custom of employing some form of the honor system. Thus, for Group A, all tests were sealed when they were distributed. The instructions were that once a student broke the seal on the take-home exam, he or she was to take it as one would take a closed book test in class; no books, notes, or any other type of reference could be used. The purpose of this procedure was to allow the student to accomplish the test at his or her convenience and in a relaxed atmosphere, but without losing the opportunity to study and learn the material. The in-class exam taken by Group B was monitored.

Because the class was large and randomly divided into two parts, it created an ideal experimental situation. Since both groups were taught by the same instructor under identical conditions, the control and experimental subjects received as equivalent an exposure as was possible with a classroom type of experiment. Only the treatment (type of test) differed for each class. (See figure 1)

One week later, a surprise, researcher-constructed, objective test was given in class to both groups. The surprise test consisted of 50 multiple-choice questions, 25 of which measured knowledge and 25 of which measured comprehension and application, as defined by Bloom's Taxonomy of Cognitive Learning (Bloom, et al., 1956).

A questionnaire accompanied the surprise test. Item no. 8 asked each student to indicate how much study effort he or she expended in preparation for his or her test, by placing a check on a continuum of numbers ranging from one to ten. Item no. 9 asked each student to indicate how much study effort he or she would have expended had he or she been assigned the other type of exam, also measured on a continuum of one through ten. The purpose of these questions was to compare the group means of the two continuum questions. This should have revealed if there was a difference between the groups in study effort, based upon the type of exam.

Results

The surprise test scores yielded an almost perfect normal distribution and there was a significant difference between the performances of the two groups. Group B performed better at the five percent level of significance.

Group A (the take-home test group) had a mean score of 49.85 and Group B (the in-class test group) was 4.15 points higher with a mean of 54.00.

On the teacher-made test, the group scores were reversed. Group A had a mean grade of 83.35 while Group B had a mean grade of 78.92. One could not help but notice that Group A scored 4.43 points higher than did Group B and that this performance was diametrically different from that of the surprise test. But since there was a significant difference between the variances of the group scores (Group A had a significantly larger variance), one could not compare the group means using usual two-sample t-test. Therefore, the Behrens-Fisher procedure for an approximate t-test had to be used. The results revealed that there was no significant difference between the means.

When comparing the mean continuum values of items no. 8 and 9 of the questionnaire, Group B scored significantly higher on item no. 8 than it did on item no. 9. In effect, the members of Group B were saying that, had they been given a take-home test, they would have studied less. Conversely, Group A scored significantly higher on item no. 9. Thus, the members of Group A were saying that they would have studied more, had they been given an in-class test.

Discussion

There should have been no significant difference between the group means on the teacher-made test. Although Group A did score noticeably higher, there was no statistical difference. Likewise, if the honor system had operated correctly, there should not have been a significant difference between group scores on the surprise test because a similar amount of learning should have occurred as a result of study effort by both groups.

But Group B did score significantly better. Therefore, one should ask, "Why did Group B score higher?"

Both groups A and B were randomly created. If one accepts the adequacy of the experimental controls, there should have been no statistical difference in performance between the groups. However, the variable of student dishonesty was not controlled. Because of the difference in the evaluation treatments, Group B did not have the opportunity to act dishonestly, but Group A certainly did. Therefore, it would be reasonable to consider that some students in Group A were less than honest while performing their teacher-made, take-home test.

This conclusion would explain why the A Group had a greater variance in its test scores on the teacher-made test. If some students cheated and some did not, one result would be a larger variance, which did occur in this situation. Student dishonesty would also help to explain why there was a significant difference in the surprise test means. If Group A had studied honestly for the exam, it should have scored as well as Group B. But by their own admission on the questionnaire, the students in Group A admitted that they did not study as much for their take-home test. Yet, when both teacher-made test means were compared, Group A scored at least as well as did Group B.

Another interesting facet is the analysis of a group's performance by comparing its own scores on both the teacher-made and the surprise tests. As it happened, both groups scored lower on the latter. But in the case of Group B, there was no statistical difference between the two test scores. This would imply that there was an adequate study effort by the students and the lower score on the surprise test was due to some natural error or decay

of knowledge over time. However, Group A did score significantly lower on the surprise test, which suggests the intrusion of an uncontrolled variable. (See figure 2)

Again, because of random selection, there should not have been such a drop in performance, unless Group A students did not expend as much study effort as did those in Group B. The post-test survey clearly showed that this was the case. But if this was true, why did Group A score at least as well as Group B on the teacher-made test? One obvious variable to explain this difference is student dishonesty. If several students in Group A were dishonest in doing their take-home test, they should have scored as well as those in Group B on the teacher-made test; they should have performed worse on the surprise test; and their scores on the surprise test should have been lower than those of Group B. All of these things did, in fact, happen.

Finally, the research literature on dishonesty in higher education supports the notion that some students in Group A cheated on the take-home exam.

Conclusion

Some of the students in Group A (the take-home exam) probably cheated and did not learn the subject matter well enough. Although the evidence is circumstantial, the preponderance of it and the experimental controls mitigate strongly against a coincidental occurrence of the obtained performances. It appears that some students in Group A took advantage of a situation which was ideal for one who resorts to dishonesty; namely, that anonymity was assured.

This conclusion is well supported by the literature. This situation exemplified a classic pattern for dishonesty in higher education as depicted by previous research. The class was large, in a large prestigious institution, it was a take-home (unsupervised) type of assignment (homework) and there was an honor system in effect. The students at this school probably had social pressure to succeed and valued honesty highly, but the temptation created by the situation might have been too much for some to resist. Thus, it appears that an unstructured evaluation contributes to the compromising of one's academic integrity.

More research on test anxiety and testing conditions is certainly warranted, particularly as to how an environmental variable affects a variable of personality. But until more knowledge is available, one should probably not depend upon a take-home project as the sole criterion for determining competency in a course.

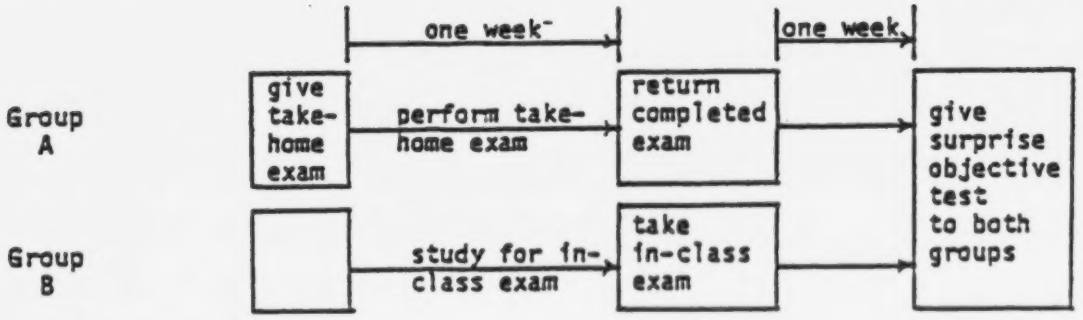

Figure 1. The design used in this experiment. (Groups were selected randomly.)

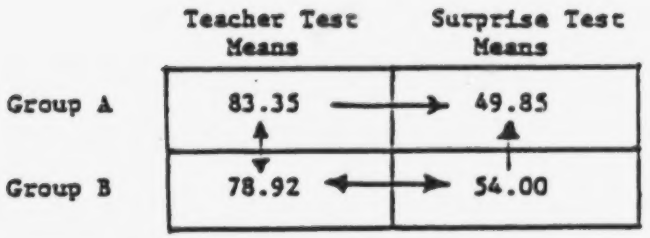

Figure 2. Significant ($P < .05$) differences in group means. (Two-headed arrows depict no significant difference.) All tests are based on 100 points.

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